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EXAMINER	
BAREFORD, KATHERINE A	

ART UNIT	PAPER NUMBER
1762	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/783,864	UEBERSCHAR ET AL.	
	Examiner	Art Unit	
	Katherine A. Bareford	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-45 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 24-45 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Claims 1-23 are cancelled

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/996,304.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: at page 1, in the reference to the parent case 09/996,304, it should be indicated that the parent case is now abandoned.

Appropriate correction is required.

Claim Objections

2. Claims 34 and 36 are objected to because of the following informalities: (1) in claim 34, line 3, "ml/m2" (both occurrences) should be "ml/m^2". (2) in claim 36, line 2, "ml/m2" (both occurrences) should be "ml/m^2". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 24-36 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the application of first and second mediums using curtain coating applicators, does not reasonably provide enablement for application using other forms of applicators. The specification does not enable any

person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The application as originally filed in the parent application always provides that the application method and apparatus is by curtain coating. There is no indication that the method will work with other forms of application, and one of ordinary skill in the art would have to perform undue experimentation to test every possible application method and apparatus to see whether it would actually work.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 34, 43 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34, line 1, "said first curtain applicator unit" lacks antecedent basis, since no such applicator unit is provided in parent claim 24.

Claim 43, it is unclear what speeds are actually required, because coating graphic papers or cardboard is not necessarily required. When coating plain paper, for example, the speed requirements are not clear.

Claim 44, it is unclear what weights are actually required, because coating graphic papers or cardboard is not necessarily required. When coating plain paper, for

example, the weight requirements are not clear. Furthermore, it is unclear if these weights refer to the coating when wet or when dry.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 24-34, 36-38 and 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al (US 4230743).

Nakamura teaches a method of adding layers to a material web. Figure 4 and column 1, lines 10-15. At least one first layer of a first application medium is applied to

the web. Figure 4 and column 7, lines 1-15. At least one second layer of a second application medium is applied to the material web. Figure 4 and column 7, lines 1-15. The application mediums are liquid or pasty. Column 7, lines 60-65, and column 10, lines 30-40. The first application medium (the microcapsule containing medium) can have a solids content of 10-60 wt%. Column 7, lines 60-68. The second application medium (the color developer) can have a solids content of 10-60 wt%. Column 12, lines 30-40. The viscosity of the first medium can be 20 to 200 centipoise (=mPas). Column 7, lines 60-68. The viscosity of the second medium can be 10.8 or 19.5 centipoise (=mPas). Column 15, lines 60-65 and column 16, lines 55-60.

Claim 25: the water retention capability of the second application medium can be higher than that of the first application medium, as the amount applied of each material can be roughly the same and the second medium can contain an absorptive material, such as clay, not found in the first medium. Column 10, lines 25-40 and column 13, lines 30-40.

Claim 26: the density of the first application medium can be significantly greater than the density of the second application medium, given that in Example 2, for example, the first medium has a significantly higher solids content than the second medium, indicating its greater weight. Column 15, lines 35-65.

Claim 27: the viscosity of the first medium can be higher than that of the second medium, given that the viscosity of the first medium is taught to be 20 to 100 centipoise,

while the viscosity of the second medium can be as low as 10.8 centipoise. Column 7, lines 60-68 and column 15, lines 55-65.

Claim 28: the first medium, for example, can be an aqueous solution or dispersion of solid particles. Column 7, lines 60-65 and column 10, lines 1-10 (the solid particles). The ~~scone~~ second medium can also contain solid particles, such as clay as an aqueous solution or dispersion. Column 12, lines 30-40 and column 10, lines 25-35.

Claim 29: the first medium can be a butadiene-styrene dispersion. Column 9, lines 50-55. The second medium can be a butadiene-styrene dispersion. Column 12, lines 40-45 and column 15, lines 55-65.

Claim 30: the solid particles can be mineral pigments or plastic particles. Column 10, lines 5-20.

Claim 31: the solid particles can be plastic, microcapsules or starch. Column 10, lines 5-20.

Claim 32: the first medium can have solids content of 10-60 wt%. The viscosity can be 20 to 100 mPas. The first medium can be a barrier layer, to the extent that the surface is covered and a protective mateiral is also present. Column 10, lines 1-10.

Claim 33: the first application medium can be a starch solution. Column 10, lines 5-10 (note the presence of starch).

Claim 34: the first application medium can be applied with a curtain coater in an amount of 3.4 l/min (3400 ml/min) for a slit length of 800 mm (0.8 m) at a speed of 300

m/min. Column 17, lines 35-45 (sample 9). This provides an amount of 3400/(.8 x 300) = 14 ml/$\frac{m^2}{min}$.

Claim 36: the second application medium can be applied with a curtain coater in an amount of 4.7 l/min (4700 ml/min) for a slit length of 800 mm (0.8 m) at a speed of 300 m/min. Column 17, lines 35-45 (sample 9). This provides an amount of 4700/(.8 x 300) = 19.58 ml/$\frac{m^2}{min}$.

Claim 37: the apparatus can include a first curtain applicator unit with a first discharge nozzle, whereby the first medium is discharged as a first curtain onto a moving base. Figure 4 and column 7, lines 1-15. A second curtain applicator unit with a second discharge nozzle is provided for providing the second medium as a second curtain onto a moving base. Figure 4 and column 7, lines 1-15. The second applicator is positioned relative to the first applicator such that the first coating is still wet when the second coating is applied. Figure 4 and column 7, lines 1-15.

Claim 38: the curtain applicators apply the mediums, respectively, onto the moving base in a substantially finally metered manner. Figure 4 and column 7, lines 1-25.

Claim 41: the curtain heights of the first and second curtains can be about 10 to 20 cm (100 to 200 mm). Column 13, lines 40-45.

Claim 42: the first curtain applicator can discharge the first medium at 3.4 l/min for a width of 800 mm (0.8 m). Column 17, lines 35-45 (sample 9). This gives 3.4/0.8 = 4.25 l/min per meter of width. The second curtain applicator can discharge the first

medium at 4.7 l/min for a width of 800 mm (0.8 m). Column 17, lines 35-45 (sample 9). This gives 4.7/0.8 = 5.875 l/min per meter of width.

Claim 43: the base speed can be 1000 m/min. Column 5, lines 35-40. For example, the speed can be 300 m/min. Column 17, lines 35-45.

Claim 44: the coating amount can be greater than 4 g/m2 for each layer. Column 13, lines 30-40.

Claim 45: the web can be a paper of film web. Column 13, lines 5-15.

Nakamura teaches all the features of these claims except (1) that the viscosity is measured as a Brookfield viscosity determined at 100 rev/min (claim 24), (2) the density (claim 32), (3) the distance between the first and second applicators (claim 37), (4) the exact amount of material (claim 44).

It is the Examiner's position that it is well known to measure viscosity using a Brookfield system determined at 100 rev/min. If applicant disagrees, he should so state on the record.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura to provide that the viscosity is within the claimed range when measured using the Brookfield system determined at 100 rev/min, because Nakamura teaches a range of 20-~~100~~ 200 centipoise viscosity without telling precisely how it is measured, and it is the Examiner's position that the use of a Brookfield system to measure the viscosity is a well known way of measuring viscosity, and its use would provide the desired viscosity of Nakamura when performing the

process of Nakamura. It would further have been obvious to provide a density within the claimed range when performing the process of Nakamura, as Nakamura teaches to use an aqueous base and to given a range percentage of solids of defined additive materials, which would provide densities in the claimed range. It would further have been obvious to modify Nakamura to perform routine experimentation to optimize the distance between the first and second applicators, because Nakamura teaches to apply the second coating while the first coating is still wet, and therefore, the second applicator must be close enough to the first applicator for this to occur, based on the materials used and the speed of the coating. It would further have been obvious to modify Nakamura to perform routine experimentation to optimize the exact amount of material to be applied based on the materials to be used, because Nakamura teaches to apply more than 4 g/m2 of material for each layer.

10. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to claims 24-34, 36-38 and 41-45 above, and further in view of Shay (US 5192592).

Nakamura teaches all the features of this claim except the ink filled microcapsules. Nakamura teaches that microcapsules can be provided in the first coating as part of the protective agent, where the microcapsules are filled with other than color developer. Column 10, lines 1-10. The microcapsules can be 3-50 microns is size. Column 10, lines 10-20. The solids content of the first coating can be 10-60 wt%.

Column 7, lines 60-68. The viscosity of the first coating can be 10-200 centipoise (=mPas). Column 7, lines 60-68.

However, Shay teaches that it is known to provide aqueous coatings of styrene-butadiene latex, clay, starch, calcium carbonate and ink capsules. Column 6, lines 45-50. the solids content of this coating can be about 50 wt%. Column 6, lines 55-60. Shay teaches that the taught coatings can be commonly applied by blade, roll and curtain coating processes. Column 5, lines 50-60.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura to use ink filled microcapsules as suggested by Shay with an expectation of desirable coating results, because Nakamura teaches that microcapsules filled with other than developer can also be used in the first coating and Shay teaches that it is well known that capsules of ink can be curtain coated.

11. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to claims 24-34, 36-38 and 41-45 above, and further in view of Greiller (US 3632374).

Nakamura teaches all the features of this claim except the vacuum device positioned between the two applicators.

However, Greiller teaches that when curtain coating, it is well known to position a vacuum device attached to a curtain coating system to be placed directly before a curtain. Figure 9 and column 10, lines 30-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura to a vacuum device positioned between the two applicators as suggested by Greiller with an expectation of desirable coating results, because Nakamura teaches curtain coating with two devices in series, and Greiller teaches the desirability of placing a vacuum device directed before the curtain of a curtain coating device, which would provide a vacuum device prior to the first curtain coater and the second curtain coater of Nakamura, and the vacuum device prior to the second curtain coater would be located between the two curtain coaters.

12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura as applied to claims 24-34, 36-38 and 41-45 above, and further in view of Saito et al (US 5136970).

Nakamura teaches all the features of this claim except the guide elements.

However, Saito teaches that when curtain coating, it is desirable to provide guide elements that guide curtain flow from the slot of the curtain coating nozzle. Figures 1-3 and column 3, lines 5-25.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nakamura to a curtain guide member as suggested by Saito with an expectation of desirable coating results, because Nakamura teaches a method of curtain coating in series and Saito teaches that it is desirable to use a guide member when curtain coating.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KATHERINE BAREFORD
PRIMARY EXAMINER